CLAIMS

1. A memory device characterized by comprising:

a memory (11) including a plurality of memory blocks which stores data and each

5   of which is comprised of one or more physical pages each including one or more logical

pages; and

a controller (12, S314, S308 to S310) which, when to-be-written data is supplied to

said memory device, writes said to-be-written data in that empty logical page in said logical

pages which is in a data storable state, discriminates whether to-be-replaced data to be

10   replaced with said to-be-written data is stored in said logical pages, and writes validity data

indicating that said to-be-replaced data is not valid in that physical page which includes said

logical page that stores said to-be-replaced data, when having discriminated that said to-be-

replaced data is stored in said logical page.

2. The memory device according to claim 1, characterized in that when

15   information for specifying a to-be-read logical page to be read out is supplied to said

memory device, said controller (12) specifies said to-be-read logical page based on said

information, reads data from said specified to-be-read logical page and sends said read data

outside (S201 to S214).

3. The memory device according to claim 1, characterized in that physical

20   addresses are allocated to said logical pages,

said memory device further comprises a memory (123) for storing an address

translation table representing a correlation between said physical addresses of said logical

pages and logical addresses to be used to specify said logical pages by an external unit, and

a memory (123) for storing a write pointer that points the empty logical page in said logical

25   pages which is in a data storable state and instructs the physical address of said specified

empty logical page, and

when to-be-written data and a logical address are supplied to said memory device,

said controller (12) writes said to-be-written data in said empty logical page pointed by said write pointer, and renews said address translation table in such a way as to show a correlation between said physical address of said empty logical page and said logical address (S321).

5   4. The memory device according to claim 3, characterized in that said controller (12) writes validity data indicating that said written to-be-written data is valid in the physical page which includes the logical page where said to-be-written data is stored (S314), specifies the logical page where data is not stored based on said validity data and treats said specified logical page as said empty logical page.

10   5. The memory device according to claim 4, characterized in that said controller (12) discriminates whether or not data stored in each of said logical pages in to-be-erased memory blocks is valid based on said validity data (S501), specifies that logical pages which are located in another memory blocks and where data is not stored and transfers that data which has been discriminated as valid into said specified logical pages (S502 and S503, 15   S507), and erases data stored in said to-be-erased memory blocks (S504).

6.   The memory device according to claim 5, characterized in that when information for specifying a to-be-read logical page to be read out is supplied to said memory device, said controller (12) specifies said to-be-read logical page based on said information, reads data from said specified to-be-read logical page and sends said read data 20   outside (S201 to S214).

7. The memory device according to claim 1, characterized in that said controller (12) writes said validity data in an area which is not included in any one of logical pages in that physical page which includes said logical page that stores said to-be-replaced data (S308 to S310).

25   8.   The memory device according to claim 7, characterized in that when information for specifying a to-be-read logical page to be read out is supplied to said memory device, said controller (12) specifies said to-be-read logical page based on said

information, reads data from said specified to-be-read logical page and sends said read data outside (S201 to S214).

9. A memory managing method of managing a memory (11) including a plurality of memory blocks which stores data and each of which is comprised of one or more physical pages each including one or more logical pages, characterized by comprising the steps of:

writing, when to-be-written data is supplied to said memory, said to-be-written data in that empty logical page in said logical pages which is in a data storable state (S314); and

discriminating whether to-be-replaced data to be replaced with said to-be-written data is stored in said logical pages, and writing validity data indicating that said to-be-replaced data is not valid in that physical page which includes said logical page that stores said to-be-replaced data, when it is discriminated that said to-be-replaced data is stored in said logical page (S308 to S310).

10. The memory managing method according to claim 9, characterized in that validity data indicating that said written to-be-written data is valid is written in that physical page which includes the logical page where said to-be-written data is stored (S314), that logical page where data is not stored is specified based on said validity data and said specified logical page is treated as said empty logical page.

11. The memory managing method according to claim 10, characterized in that it is discriminated whether or not data stored in each of said logical pages in to-be-erased memory blocks is valid based on said validity data (S501), that logical pages which are located in another memory blocks and where data is not stored is specified and the data which has been discriminated as valid is transferred into said specified logical pages (S502 and S503, S507), and data stored in said to-be-erased memory blocks is erased (S504).

12. A program for allowing a computer (121), connected to a memory (11) including a plurality of memory blocks which stores data and each of which is comprised of one or more physical pages each including one or more logical pages, to function to:

write, when to-be-written data is supplied to said memory, said to-be-written data in that empty logical page in said logical pages which is in a data storable state (S314); and

discriminate whether to-be-replaced data to be replaced with said to-be-written data is stored in said logical pages, and write validity data indicating that said to-be-replaced data is not valid in that physical page which includes said logical page that stores said to-be-replaced data, when it is discriminated that said to-be-replaced data is stored in said logical page (S308 to S310).